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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,969	08/15/2004	Edward Jobson	6730.058.PCUS00	9376
28694	7590	05/02/2006		
NOVAK DRUCE & QUIGG, LLP 1300 EYE STREET NW 400 EAST TOWER WASHINGTON, DC 20005			EXAMINER GREENE, JASON M	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/710,969

Applicant(s)

JOBSON ET AL.

Examiner

Jason M. Greene

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-21, 31 and 33 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 22-28, 30, 32 and 34 is/are rejected.
- 7) ☒ Claim(s) 6, 8-12, 29 and 35-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Sweden on 15 February 2002. It is noted, however, that applicant has not filed a certified copy of the 0200453-9 application as required by 35 U.S.C. 119(b).

Drawings

2. The drawings were received on 8 February 2006. These drawings are acceptable.

Response to Arguments

3. Applicant's arguments, see page 16, lines 2-15, filed 8 February 2006, with respect to the rejection(s) of claim(s) 1-5, 7, 22-28, 30 and 32 under 35 USC 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Art Unit: 1724

However, upon further consideration, a new ground(s) of rejection is made in view of Khair et al. (US 6,293,096 B1) and Murachi et al. (US 5,746,989).

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Mieville et al. (US 5,660,800).

Mieville et al. discloses a device for treatment of a gas flow comprising at least one first section (126) for counter-current heat exchange, the first section having a plurality of gas flow passages which form inlet passages (128) for incoming gas and a plurality of gas flow passages which form outlet passages (128') for outgoing gas, the inlet passages terminating in a reversing zone (formed by surface 138 of bottom plate 132) and the outlet passages extending from the reversing zone, the reversing zone being arranged for changing the direction of the gas flow from a first direction in the inlet passages to a second direction in the outlet passages, and the device comprising a second section (122) being provided with at least a first opening (the inlet openings in channels 124) for an incoming gas flow to the second section, and at least one second opening (the outlet openings in channels 124') for exit of the gas flow from the second section, said second section having a plurality of distribution channels (124) arranged

Art Unit: 1724

for distributing the incoming gas flow to the inlet passages of the first section, and a plurality of collecting channels (124') for collecting outgoing gas flow from the outlet passages of the first section in Figs. 7-9 and col. 6, line 37 to col. 8, line 61.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, 7, 22-28, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khair et al. (US 6,293,096 B1) in view of Murachi et al. (US 5,746,989).

With regard to claims 1, 4 and 5, Khair et al. discloses a device for treatment of a gas flow, said device comprising at least one body (22,32) configured to cause a conversion in the composition of a gas flow (using catalysts and adsorbents) during operation of the device, said body having a modular construction comprising a plurality of sections (22,32), each with different internal structures that allow gas to flow therethrough, said sections being arranged so that at least a portion of the gas flows through at least two sections, each of the sections having different internal structures,

Art Unit: 1724

and one of the sections (wallflow trap 32) having a structure forming gas flow passages and at least one of the sections (22) comprising an internal cavity (24) in Fig. 1 and col. 1, line 45 to col. 5, line 52.

Khair et al. teaches that the NO_x trap of Murachi et al. can be used as the NO_x trapping section 22, but does not explicitly recite section 22 having an internal structure forming gas flow passages.

Murachi et al. teaches the NO_x trap (9) being formed as a honeycomb structure in Fig. 1 and col. 4, lines 50-63.

Since Khair et al. makes an explicit teaching of using the NO_x trap in forming section 22, one of ordinary skill in the art would have readily appreciated that the two references could be combined. Additionally, one of ordinary skill in the art would have recognized that the honeycomb structure of Murachi et al. could be incorporated into the NO_x trap of Khair et al. to provide a large surface area for accumulating NO_x, as is well known in the art.

With regard to claims 2 and 28, Khair et al. discloses the sections 14 and 32 exhibiting a substantially unchanged cross-section along longitudinal axis thereof in Fig. 1.

With regard to claim 3, Khair et al. discloses the sections (22,32) substantially being made out of a ceramic material in col. 5, lines 4-6.

With regard to claim 7, Khair et al. teaches the body being arranged to permit heat exchange between gas flows in adjacent gas flow passages since adjacent passages are arranged parallel to one another and separated only by a thin wall.

With regard to claims 22, 23, 27 and 32, Khair et al. discloses the device being adapted to purify the exhaust gas from a mobile internal combustion engine and at least a part of the surfaces in the body that are in contact with the gas flow being coated with a catalyst or adsorbent material in col. 2, lines 16-38.

With regard to claims 24-26, Khair et al. discloses the device comprising means for controlling the temperature of the gas flow comprising a heat generator, an arrangement (40) for injecting an oxidizable species (fuel) into the incoming airflow, and an arrangement for controlling operation of the engine to affect the composition of the incoming gas flow in Fig. 1 and col. 5, lines 14-52.

With regard to claim 30, Khair et al. discloses the body having a general shape of a circular cylinder in Fig. 1.

Allowable Subject Matter

8. Claims 13-21, 31 and 33 are allowed.

Art Unit: 1724

9. Claims 6, 8-12, 29 and 35-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claim 6, the prior art made of record does not teach or fairly suggest the device of claim 5 wherein the first and second sections are arranged so that at least a portion of the walls that define the gas flow passages in the first section form extension of at least a portion of the walls that define the gas flow passages in the second section.

With regard to claims 8-12, the prior art made of record does not teach or fairly suggest the device of claim 7 wherein said device is arranged so that the main direction of the gas flow in one gas flow passage is essentially the opposite of the main direction of the gas flow in an adjacent gas flow passage during operation of the device, or wherein the gas flow passages form inlet passages that are intended for incoming gas flow and outlet passages that are intended for an outgoing gas flow, and that a reversing zone is arranged in connection with the first section so that gas entering said reversing zone from the inlet passages is permitted to change direction and flow back through the outlet passages,

Claim 13-21 and 31 are allowable since claims 13 and 16-20 have been rewritten in independent form.

With regard to claim 29, the prior art made of record does not teach or fairly suggest the device of claim 3 wherein the sections are joined together by sintering.

With regard to claim 33, Mieville et al. discloses a device for treatment of a gas flow comprising at least one first section (126) for counter-current heat exchange, the first section having a plurality of gas flow passages which form inlet passages (128) for incoming gas and a plurality of gas flow passages which form outlet passages (128') for outgoing gas, the inlet passages terminating in a reversing zone (formed by surface 138 of bottom plate 132) and the outlet passages extending from the reversing zone, the reversing zone being arranged for changing the direction of the gas flow from a first direction in the inlet passages to a second direction in the outlet passages in Figs. 7-9 and col. 6, line 37 to col. 8, line 61.

Matros et al. discloses a similar device comprising a body (10) comprising a section (38) provided with walls that are permeable to the gas flow, said section being primarily adapted to remove particulates from the gas, wherein the section is arranged adjacent to and downstream from a first section (18H), wherein the permeable walls essentially define an extension of the gas flow passages in the first section, the inlet

passages being closed on the downstream side so that gas is forced to flow through the permeable walls during operation of the device.

However, there is no motivation to incorporate the filter section of Matros et al. into the device of Mieville et al. since the resultant device would not operate as intended. Specifically, the filter section of Matros et al. is an axial flow honeycomb wherein alternate channels are plugged at their upstream or downstream sides. If the filter section of Matros et al. were incorporated into the device of Mieville et al., the gas flow would be incapable of reversing its flow direction since the plugs on the upstream side of the filter section would prevent gas flow through the outlet passages of Mieville et al.

The prior art made of record does not teach or fairly suggest the device of claim 33 wherein at least a part of the reversing zone is arranged using gas permeable walls in a portion of the section which walls divide the gas flow passages into the inlet and outlet passages, said outlet gas passages being closed to the reversing zone so as to force the incoming gas through the permeable walls into the outlet passages while depositing particles in the reversing zone during operation of the device.

With regard to claim 35, the prior art made of record does not teach or fairly suggest the device of claim 34 wherein two said first sections are arranged on opposite sides of the second section, the plurality of distributing channels of the second section being arranged for distributing the incoming gas flow to the inlet passages of both first

Art Unit: 1724

section, and the plurality of collecting channels of the second section being arranged for collecting the outgoing gas flow from the outlet passages of both first sections.

With regard to claim 36, the prior art made of record does not teach or fairly suggest the device of claim 34 wherein the second section has a ring-shaped cross section forming a cavity inside the device which cavity allows the gas flow in the longitudinal direction of the device, and said at least one first opening for entrance of an incoming gas flow to the second section being directed towards said cavity.

With regard to claim 37, Mieville et al. discloses the first and second section being enclosed within a housing (130) in Fig. 8.

The prior art made of record does not teach or fairly suggest the device of claim 34 wherein an outlet channel is formed between the housing and the first and second sections in the periphery of the device, which outlet channel allows the gas to flow in the longitudinal direction of the device, and said at least one second opening for exit of the gas flow from the second section being directed towards said outlet channel.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 1724

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

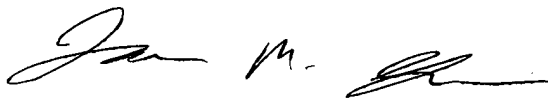
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene
Primary Examiner
Art Unit 1724


4/28/06

jmg
April 28, 2006